

# *The Chisungu Primary School Water and Sanitation project*

## *Rising up the Sanitation Ladder*

*from Arborloo to VIP*

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*A good toilet,  
together with a  
safe reliable  
water supply and  
the practice of  
good personal  
hygiene can do  
much to improve  
personal and  
family health and  
wellbeing.*





*In the new Zimbabwe sanitation program a range of toilet designs must be used to suit local circumstances*

*Some families may have bricks to help build the toilet.  
Other families may be unable to afford bricks.*





*It is possible to  
start with simple  
toilets like the  
Arborloo and  
upgrade these over  
time to the Blair  
VIP toilet*

*This Arborloo and  
Blair VIP toilet were  
both built by school  
children*





*The **Arborloo** is a simple shallow pit toilet, where soil and ash are added to the pit as well as excreta. When the pit is near full, the **Arborloo** is moved to another site soil is added to the pit and a tree is planted in it.*



*The **Blair VIP** is a pit toilet fitted with a screened ventilation pipe and built with a semi-dark superstructure which controls flies and odours.*

*Most are built over pits lined with bricks.*





*All the toilets shown in this lecture have one  
common feature*

***A concrete slab.***

*Simple slabs for the Arborloo may be made  
just with a squat hole like this one!*



*But concrete slabs which can be used on a range of "upgradeable" toilets including the **Blair VIP** must have a hole made to fit a ventilation pipe*





*The **concrete slab** is quite easy to make once the training has taken place. A 1.1metre diameter slab uses 10 litres of cement and 50litres of river sand and about 8m of 3mm wire. A full bag of cement holds 50 litres of cement.*





*Once the **concrete slab** has been properly cured by leaving it covered and wet for a week before moving, it can be used to make a wide range of toilets.*





*Where the ground is moderately firm and there are no bricks available a "ring beam" can be used to protect the pit.*

*This can be made of concrete or fired bricks. When the concrete has cured a shallow pit is dug inside the ring beam down to about one metre*





*The **concrete slab** is mounted over the ring beam and a suitable "toilet house" (superstructure) is built on top.*





*The **Superstructure** can be made in many ways to provide privacy! Only light weight superstructures can be built over pits lined with "ring beams."*





*The "ring beam method" is fast, low cost and simple, but the pit is small and shallow and will fill up in about a year.*

*Then the toilet (ring beam, slab and superstructure) must be moved to a new place. The pit is filled with soil and planted with a tree (best during the rains).*





*Many types of tree grow well on "Arborloo" pits.*

*The tree is planted in a 15cm layer of soil placed on top of the pit contents. Trees include mulberry, paw paw, banana, avocado, gum and many more. The tree can also be planted to the side of the pit as well.*





*However if **bricks** are available it is better to dig a larger pit and line it with bricks. The pit will last for much longer. Also heavy brick Superstructures can be built on top of pits lined with bricks.*





*A brick laying method known as **corbelling** can be used and is very useful.*

*In this technique the pit is dug wide and bricks laid in a circle. The upper brick course are stepped bit by bit, so that the diameter is reduced. This means that the same small 1.1m diameter slab can be fitted over a pit which may be 1.3m or more in diameter.*





*Once the concrete slab is laid (in mortar) on top of the lined pit a wide range of superstructures can be built on top.*

*This combination (making slab and cement mortar for brickwork). can be built with a single bag of cement  
It is an excellent **starting point** on which to build a wide range of toilet superstructures.*





*The **superstructure** can start simple being made with grass and poles. Many neat designs are possible.*





*But if bricks are available some very neat **superstructures** can be built also on or around the same slab mounted over brick lined pit. Here a round brick structure is being built directly on top of the slab!*





*These toilets are being made by **primary school children** under special tuition. A huge amount of natural talent lies in the school children. Many are keen and able, given the opportunity and encouragement.*  
***Give then the opportunity!***





*This is a round structure with a door. But durable and low cost structures can be built without a door like the "old" Blair VIP!. They have no moving parts - an advantage. And made at much lower cost!*





*And yes, there are special ways of making  
low cost vent pipes and low cost pedestals  
too. The technical details are known.  
But that's next time!*





*To follow in further presentations:  
The detail of how to do it.*

*Zimbabwe has the skill and knowledge, given the opportunity, to show to the world that it can solve the problems encountered by a lack of sanitation water and food. And all the other things! The technical solutions are available now and still evolving! .*

